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RIO GRANDE VALLEY

AT RISK FROM FRACKED-GAS EXPORT TERMINALS

| 2019 UPDATE

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Summary for Financial Institutions

Three proposed LNG terminals in the Rio Grande Valley in South Texas pose significant reputational risks to any bank or investor. The projects would significantly and negatively affect Indigenous rights, community health, endangered species, and the global climate.

PROJECT NAME	COMPANY
TEXAS LNG	TEXAS LNG
ANNOVA LNG	EXELON CORPORATION
RIO GRANDE LNG AND RIO BRAVO PIPELINE	NEXTDECADE

Key Risks

Climate Disaster

- » The three terminals would do the same damage to the climate as approximately 61 coal plants.
- » These terminals predominantly liquefy fracked gas, and would contribute to expansion of fracking in the Eagle Ford and Permian shale basins.
- » Complying with the Paris Agreement's goal of limiting global warming to 1.5° Celsius requires an end to all expansion of fossil fuel infrastructure.

Ecosystem Damage

- » These terminals are greenfield projects that would pave over wetlands and divide a national wildlife refuge.
- » Construction and operation would destroy habitat for multiple endangered species. Habitat loss, noise, and ship traffic would mean "permanent and significant" impacts to the endangered ocelot.

Indigenous Rights Violations

- » The Texas LNG terminal site contains a sacred burial site of the ancestors of the Carrizo/Comecrudo Tribe of Texas. This burial site is recognized by the National Park Service.
- » Texas LNG failed to consult with the Carrizo/Comecrudo Tribe.

Community and Health Impacts

- » These LNG terminals would emit thousands of tons of harmful pollutants into the air, impacting the health of nearby low-income Latinx communities.
- » The facilities would significantly degrade the local fishing, shrimping, and ecotourism industries, which make up large parts of the local economy.
- » The projects are formally opposed by the City of South Padre Island, the City of Port Isabel, the Town of Laguna Vista, Long Island Village, the Laguna Madre Water District, the South Padre Island Business Owners Association, the Texas Shrimp Association, and the National Park Service.

Reputational Risk to Financial Institutions

- » Civil society groups have already garnered significant attention in speaking out against banks advising these projects, and the pressure will continue.
- » Pressure from activists and Water Protectors pushed BNP Paribas to step away from Texas LNG, and ultimately from all fracked gas LNG terminals and pipelines.



Fossil gas (also called natural gas) is 95% methane. This greenhouse gas has a warming potential 87 times higher than carbon dioxide over 20 years.¹ While the combustion of gas may produce about half of the carbon dioxide (CO₂) produced by burning coal, the climate benefits of gas compared to coal often become non-existent when looking at its entire lifecycle, and in particular at methane leakage all along the supply chain.² A study conducted by NASA concluded last year that the significant increase in methane concentration in the atmosphere is mainly attributable to the oil and gas industry.³ Moreover, as described further on page 5, gas infrastructure locks in emissions outside of the carbon budget.⁴

Hydraulic fracturing, or fracking, is an unconventional extraction method used to force oil and gas out of shale rocks by injecting high-pressure fluids. Fracking is an extremely water-, energy- and chemical-intensive process. It generates even higher levels of greenhouse gas emissions than conventional extraction of fossil gas and poses great risks of water, soil and air pollution.⁵ Fracking has already been banned in many countries and localities because of its environmental and public health impacts.⁶ However, despite dangerous impacts and public opposition, fracking still accounts for 90% of planned oil and gas expansion in the United States, which could unlock 120 billion metric tons of CO₂ emissions by 2050 — equivalent to the lifetime CO₂ emissions of nearly 1,000 coal plants.⁷ Moreover, adding in estimations of methane leakage could increase the climate effect of U.S. oil and gas emissions by up to 24%.⁸

LNG — liquefied “natural” gas — is conventional or unconventional gas cooled at around -160°C and condensed into a liquid in terminals situated on the coast or offshore. From there, the liquefied gas can be shipped on tankers to be exported, regasified and burned on the other side of the planet.⁹ In addition to being an extremely energy-intensive process, creating such long supply chains means even more opportunities for methane to escape into the atmosphere. LNG thus adds about 20% more emissions than would be generated from transport through short-distance pipeline and combustion.¹⁰

Fracking provides access to trillions of cubic feet of fossil gas, largely concentrated in North America, and LNG brings an “easy” solution for the massive export of these previously inaccessible hydrocarbons. Companies are thus racing to build dozens of LNG export facilities across Canada and the United States, to be connected to a maze of pipelines that are fed from shale basins. More than 20 of these facilities are proposed in the U.S., in addition to four existing ones.¹¹

Just as emissions from oil and gas should be going into a substantial decline, this liquefied fracked gas is beginning to flood the global markets. Studies have shown that complying with the Paris Agreement’s goal of limiting climate change to 1.5°C requires an end to all fossil fuel expansion, meaning the North American fracking and LNG boom may be the single largest obstacle to tackling climate change today and in the decades to come.¹²

Three Terminals Too Many

Proposals for enormous LNG terminals spotting the Gulf Coast are clustered around existing ports and ship channels. In South Texas, near the Mexican border, fossil fuel corporations plan to transform the coastal landscape of the Rio Grande Valley from one of the last pristine areas of Texas coastline, a haven for wildlife, fishing and recreation, into an industrial LNG export hub. Three companies are moving forward with plans to build greenfield LNG export terminals on undeveloped land along the Port of Brownsville, near Port Isabel and South Padre Island, Texas.

Three LNG export terminals are proposed by different companies at the Port of Brownsville:

- » **Texas LNG**, from a company of the same name;
- » **Annova LNG**, owned by the Fortune 100 energy giant **Exelon**; and
- » **Rio Grande LNG** and the associated **Rio Bravo Pipeline**, owned by **NextDecade**.

At the time of publication, all of these terminals are in the final permitting stages, but have yet to make a Final Investment Decision.

The Texas LNG site is the smallest at 625 acres — still immense, at four times the size of Disneyland.¹³ The sprawling Rio Grande LNG site, at 984 acres, is bigger than New York City's Central Park.¹⁴ And Annova LNG's site would span about 731 acres.¹⁵ In addition is the land needed for a new pipeline, which would stretch over 137 miles to the Agua Dulce gas hub near Kingsville, Texas.¹⁶ This gas hub connects to multiple other pipelines and is a point-of-sale for gas from the Eagle Ford shale basin, where extraction through fracking has been impacting the health of other Texas communities for over a decade.¹⁷ The projects would also export gas fracked from the Permian Basin in West Texas, the second largest oilfield in the world, where drilling has already caused sinkholes and unstable ground.¹⁸

With the proposed sites of Rio Grande LNG and Texas LNG immediately adjacent to one another, and Annova LNG exactly opposite on the other side of the Brownsville Ship Channel, the cumulative impacts of all three projects must be considered, as well as the impacts of each project individually.¹⁹



Climate Disaster

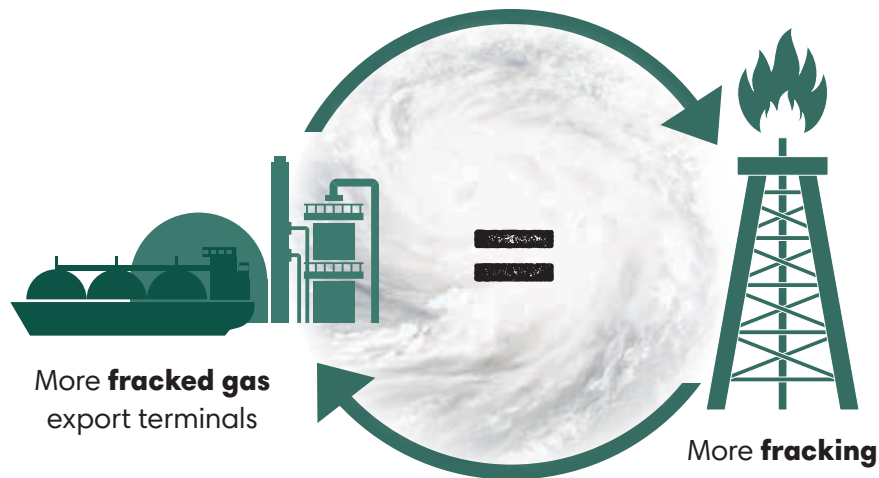
According to a study led by Oil Change International, the carbon contained in the fossil fuel fields and mines currently under production is sufficient to take the world beyond 2°C of warming. Even if we immediately stopped extracting coal, burning these oil and gas reserves would take us beyond 1.5°C of warming.²⁰ Thus, to keep to the Paris Agreement's goal of limiting temperature rise to 1.5°C above pre-industrial levels or, at maximum, well below 2°C, it is essential to leave the vast majority of hydrocarbon deposits in the ground and wind down production of some reserves before they are fully exploited. Not only must we stop extracting fossil fuels, but we also must stop building new infrastructure aimed at enabling expansion of these reserves. As Fatih Birol, executive director of the International Energy Agency puts it: "We have no room to build anything that emits CO₂ emissions."²¹

Between the three terminals planned in the Rio Grande Valley, the Port of Brownsville would be prepared to liquefy and export 5.1 billion cubic feet of gas every day.²² With each of those terminals exporting at full capacity, burning just one year's worth of the gas exported from Brownsville would create greenhouse gas emissions equivalent to the annual emissions from 26 coal-fired power plants.²³

Liquefying and shipping the gas on tankers is energy-intensive, and adds approximately 20% more CO₂ emissions.²⁴ Then there is the leakage problem: if just 3.8 percent of the gas meant for these terminals in a given year escapes into the atmosphere before being burned (a commonly observed leakage rate), the Rio Grande Valley's LNG terminals would be doing the same annual climate damage as 61 coal plants.²⁵

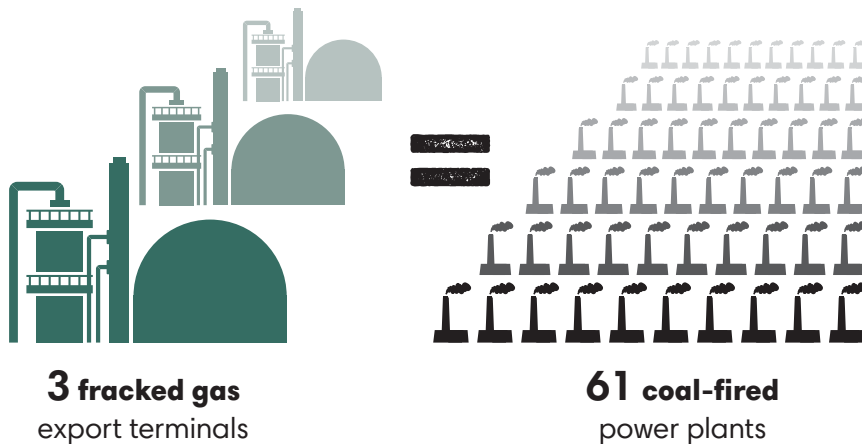


Destructive LNG and Fracking Cycle



Climate Impacts of Fracked Gas Terminals

PROPOSED IN **RIO GRANDE VALLEY**



Annova LNG, Texas LNG, Rio Grande LNG and Rio Bravo Pipeline would also be responsible for driving an increase in fracking.²⁶ The Eagle Ford and Permian shale basins, which would feed the Rio Grande Valley's terminals, are climate time bombs: projected production through 2050 from the Permian Basin alone could use up ten percent of the global carbon budget for a 50/50 chance of limiting global warming to 1.5°C.²⁷

Investing today in Rio Grande Valley's LNG terminals would lock in massive climate pollution for decades to come, while the IPCC's groundbreaking report from October 2018 shows global emissions should be roughly halved by 2030 to stay in line with the 1.5°C target.²⁸ Any financial institution that is taking the climate crisis seriously must not support these projects.

Indigenous Rights Violations

The legacy of Indian displacement in Texas is one of the most thorough examples of land dispossession in the Americas. Throughout Texas' history, sovereignty and land rights have been denied to virtually all Indigenous peoples.

Development of Texas LNG in particular poses a threat to Indigenous peoples, which the company has failed to address. The U.S. National Park Service, in its official comments to the federal agency regulating the project, noted that "[t]he proposed Texas LNG terminal site contains one of the premier prehistoric archeological sites in Cameron County, the Garcia Pasture Site. The Garcia Pasture Site (41CF8), which is listed on the National Register of Historic Places, has known burials, discrete shell working areas, and contact period artifacts."²⁹ Meanwhile, no existing tribe or nation with ancestral ties to this coastal region in Texas has federal tribal recognition.

The Carrizo/Comecrudo of Texas, a tribal group also known as the Esto'k Gna originating from the South Texas Rio Grande Delta, is one such tribe with ancestral ties to the land Texas LNG proposes to bulldoze for an LNG export terminal.³⁰ The Garcia Pasture Site is the burial site of the Carrizo/Comecrudo Tribe's ancestors, and therefore is culturally significant and constitutes sacred grounds to the Tribe. The protection of cultural sites is a human rights issue under the United Nations Declaration on the Rights of Indigenous Peoples.³¹ And yet, though the Garcia Pasture area is a culturally important sacred site, because the Carrizo are not federally recognized they have no legal rights in the matter of its development.

This is also concerning because, while Texas LNG did contact some Indigenous tribes for its Cultural Resources report, it failed to consult with the Carrizo/Comecrudo Tribe. International business and human rights standards include the right to Free, Prior, and Informed Consent by Indigenous Peoples on projects that impact their traditional lands.³² FERC, project developers and financial institutions involved in the Texas LNG project should ensure that the Carrizo/Comecrudo Tribe has the right to give or withhold their free, prior and informed consent with regards to development on their sacred grounds.

While there have been no archeological studies in the immediate construction sites of Rio Grande LNG and Annova LNG, patterns of burials in the area show a need for more collection and assessment of data with tribal guidance. It is likely that there are burials in these construction sites but because there are no studies, and because none of the local tribes qualify for protection under the Native American Graves Protection and Repatriation Act, current laws are too weak to ensure cultural protection. More archaeological and cultural data needs to be collected and assessed before any construction permits are granted, lest construction of Rio Grande LNG, Annova LNG, and Texas LNG continue the colonial legacy of cultural destruction.

Banking the development of these highly controversial projects means being complicit in violations of Indigenous rights; after banks' experience with the Dakota Access Pipeline, they should be wary of the reputational risks involved.



PHOTOS: JUAN MANCIAS, CHAIRMAN, CARRIZO COMECRUDO TRIBE OF TEXAS; SAVE RVG FROM LNG



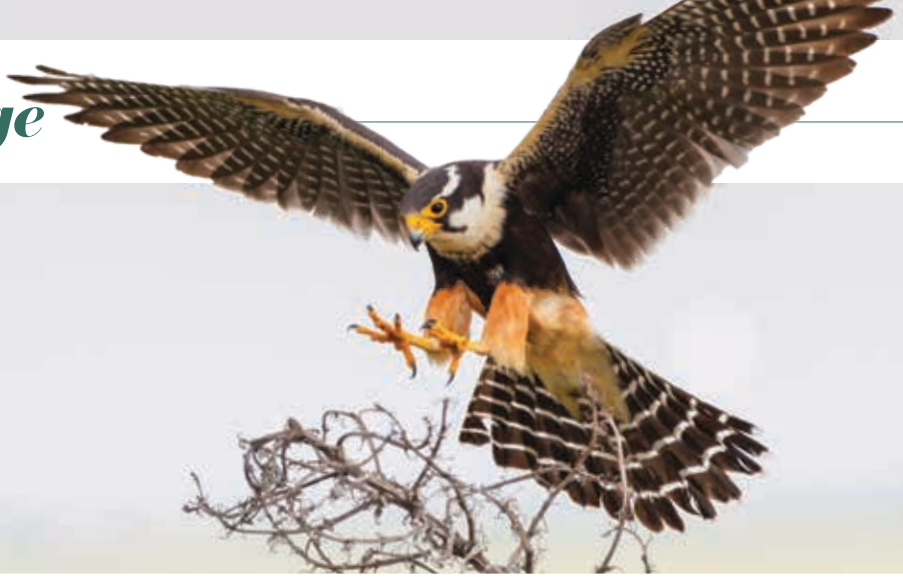
If built, the three proposed LNG terminals in the Rio Grande Valley would significantly degrade the local fishing, shrimping, and ecotourism industries. Nearby South Padre Island, a well-known destination for its sport fishing, bird-watching, and pristine beaches, would have its beauty and its economy compromised by flaring towers hundreds of feet tall, the release of millions of gallons of effluent water, and the brown haze that would come with the thousands of tons of air pollution.⁴³ In the Rio Grande Valley, nature tourism alone leads to 6,600 part- and full-time jobs.⁴⁴ An LNG terminal, on the other hand, creates mostly temporary construction jobs, and typically only a few hundred permanent jobs.⁴⁵ The largest terminal proposed for the Rio Grande Valley would only create about 200 permanent jobs, while its effects would put many more livelihoods in jeopardy.⁴⁶ These economic concerns, along with the threat to the environment and public health, have prompted many city councils and community groups to formally oppose the projects, including the City of South Padre Island, the City of Port Isabel, the Town of Laguna Vista, Long Island Village, the Laguna Madre Water District, and the South Padre Island Business Owners Association.⁴⁷

Some of the companies behind these projects have also employed questionable conduct that adds insult to the serious injury of their proposed terminals. Annova LNG and Rio Grande LNG have both pushed for billion dollar tax incentives from communities, seeking to avoid paying property taxes to one of the poorest counties in Texas.⁴⁸



PHOTOS: SAVE RGV FROM LNG; ALISON KIRSCH / RAN

Ecosystem Damage



All together, the terminal sites would cover 2,340 acres, including paving over hundreds of acres of wetlands.⁴⁹ Fourteen liquefaction trains, eight storage tanks, and hundreds of miles of new pipeline would be built for these three projects.⁵⁰ The development and operation of the gas infrastructure, as well as the constant navigation of tankers shipping the gas across the ocean, would severely harm and fracture the wildlife corridor concentrated in the Rio Grande delta and around the ship channel, and would further divide a national wildlife refuge.

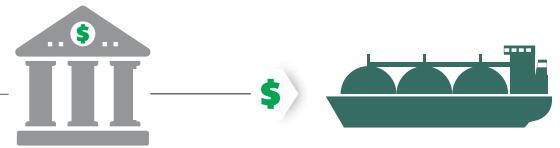
The terminals are proposed on greenfield sites right on the edge of the Bahia Grande unit of the Laguna Atascosa National Wildlife Refuge, which the U.S. Fish and Wildlife Service calls “one of the largest and most successful coastal wetland restoration projects in the United States.”⁵¹ The 21,700-acre refuge is a safe haven for a range of species and native vegetation, as well as a crucial storm barrier for weather events that are increasing in frequency and strength with climate change.⁵²

Endangered ocelots and Aplomado falcons roam this area, but LNG construction, bright lights, tall structures, air pollution, ship and vehicle traffic, and wastewater would fundamentally alter the ecosystem beyond repair.⁵³ Laguna Atascosa National Wildlife Refuge is the natural habitat of one of just two populations of ocelots left in the United States, across which there are a total of 60 or fewer individuals.⁵⁴ The 2018 final environmental impact statement for Texas LNG states that the impacts on ocelots would be “permanent and significant” because of habitat destruction, as well as increased vehicle strikes.⁵⁵ The U.S. Fish and Wildlife Service has already invested millions of dollars into ocelot conservation by protecting their ability to migrate to Mexico, and these terminals would also cut off their only remaining wildlife corridor out of Texas.⁵⁶ A 2019 Defenders of Wildlife report on the threat of the three planned LNG projects to the ocelots finds that “Current commitments to mitigation by the companies developing the projects are inadequate to offset harm to ocelots.”⁵⁷

PHOTOS (CLOCKWISE FROM TOP): LARRY DITTO / DANITADELIMONT.COM; ELITRIVO / SHUTTERSTOCK



Banking on LNG



Banks that provide financing to construct these infrastructure projects (including those that act as financial advisors to the projects), or that provide other financial support for companies building LNG terminals, share responsibility for the impacts on climate, communities, and wildlife. Banks have financed top companies building LNG import and export terminals around the world with \$46 billion since the Paris Agreement, led by JPMorgan Chase, Société Générale, and SMBC Group.⁵⁸ And last year, banks increased their overall financing to the top LNG companies.⁵⁹

All three of these proposed projects are clearly subject to the Equator Principles, in virtue of their capital costs being well above \$10 million each.⁶⁰ They appear to each be Category A projects (the highest risk category), in virtue of the diverse and irreversible impacts detailed in this report. Société Générale, as an Equator Principles Financial Institution⁶¹ serving as financial advisor to NextDecade, should classify Rio Grande LNG and the Rio Bravo Pipeline as Category A. In fact, Equator Principles Financial Institutions should be aware that there is a strong argument that none of the three proposed terminals is compliant with the Equator Principles at all.⁶²

An industrial, smoggy future perpetrated by LNG export does not have to be the fate of the pristine Rio Grande Valley. The sunshine in the Rio Grande Valley not only makes its beaches desirable, but also powers the largest solar roof in Texas.⁶³ Over 100,000 Texans currently work in renewable energy. The Lone

Star State has added more wind energy capacity than any other state and is expecting huge growth in solar in the coming year.⁶⁴ As in other parts of the state, Rio Grande Valley presents an opportunity to continue this trajectory and grow the state's renewable energy portfolio.

Meanwhile, the future for LNG export remains murky, with the glut of proposed projects threatening oversupply.⁶⁵ Proposed terminals are not guaranteed to get built or even reach a Final Investment Decision (FID), given the large number of LNG export projects proposed in the U.S.⁶⁶ NextDecade, the company behind the proposed Rio Grande LNG and Rio Bravo Pipeline projects, has been forced to address this concern:

While the quantum of proposed projects around the world indicates a much larger surplus than projected, many proposed projects are unlikely to take an FID and contribute to global supply for a number of reasons, including feed gas issues, regulatory challenges, environmental opposition, and uncompetitive capital costs and pricing.⁶⁷

Ironically, if built, these new LNG terminals and the associated pipeline would also be threatened by climate change. Any future regulations that force early closure of carbon-heavy infrastructure as a way to mitigate climate change would make these projects prime candidates to become stranded assets. Also, their placement on the Gulf Coast means these projects would be at risk from extreme weather events, including storms,

Banks that have already withdrawn from LNG export projects in the Rio Grande Valley:



BNP PARIBAS



SMBC

Sumitomo Mitsui Financial Group (SMBC Group)



PHOTO: AVIGATOR FORTUNER / SHUTTERSTOCK

that will become increasingly frequent with climate change. Overall, the financial viability and prudence of Rio Grande LNG, Texas LNG, and Annova LNG are far from guaranteed.

Some global banks are starting to wake up to the risks of fracked gas and LNG. Recognizing the climate impact of the sector, BNP Paribas, Europe's second largest bank, announced in late 2017 that it would not finance pipelines and LNG export terminals that transport or are supplied by "a significant volume of unconventional gas."⁶⁸ The bank committed to stop supporting all shale pipelines and LNG terminals in North America, as well as the companies owning or operating them.⁶⁹

This announcement came just months after a delegation from the Rio Grande Valley, including Indigenous leaders and Water Protectors, traveled to Paris to speak out against the relationship between BNP Paribas and Texas LNG. At the time, BNP Paribas was acting as financial advisor to the Texas LNG project.⁷⁰ The delegation garnered significant attention in France, speaking at rallies, on popular radio shows, and at the bank's shareholder meetings.⁷¹

In reaction to this campaign and its new policy, BNP Paribas effectively announced it will not finance the development of Texas LNG.⁷² This occurred after Japanese bank SMBC Group similarly put an end to its advisory mandate for NextDecade's Rio Grande LNG project.⁷³

Pressure continues against another French bank, Société Générale, which in 2017 took over from SMBC Group as

financial advisor to the Rio Grande LNG project, with the Australian company Macquarie Capital.⁷⁴ In February 2019, Rio Grande LNG announced that it is seeking to add another advisor to the project.⁷⁵

LNG terminals in the valley would threaten the health and vitality of surrounding communities, endanger animals and damage ecosystems, destroy irreplaceable cultural assets, and usher in climate chaos — all in an area that is already burdened by disproportionate levels of poverty and sickness, and that is increasingly drier and hotter from climate change.⁷⁶ Big banks have no business funding LNG-fueled destruction in the Rio Grande Valley.

"The shale gas export market in the United States is growing rapidly with about 40 applications for export terminal construction permits. However, **the carbon footprint of unconventional shale gas** produced in the United States and exported to Asia is **worse than that of a coal-fired power plant...**"

– **Laurence Pessez**

*Head of Corporate Social Responsibility,
BNP PARIBAS⁷⁷*

Demands

The companies behind these three terminals are all planning to make Final Investment Decisions on the projects in 2019. Acknowledging the risks of these projects — including risks to local communities and ecosystems, the climate, and their own reputations — banks should publicly commit to withdraw or to not provide any direct or indirect financial services for the development or operation of Texas LNG, Annova LNG, Rio Grande LNG and Rio Bravo Pipeline, or any such gas infrastructure projects planned in the Rio Grande Valley.⁷⁸



PHOTO: TOBEN DILWORTH / RAN

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- 4 "Burning the Gas 'Bridge Fuel' Myth: Why Gas is Not Clean, Cheap, or Necessary," Oil Change International, 30 May 2019.
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- 25 Using the IPCC AR5 20-year GWP of 87 (with climate-carbon feedbacks and methane oxidation). $3.8\% * 5.1 \text{ billion cubic feet per day} * 19,260 \text{ tons methane per billion cubic feet} * 365 \text{ days} * \text{AR5 20-year GWP of } 87 = 118,528,331.94 \text{ metric tons of CO}_2\text{e}$. This value / $3,893,003.27 \text{ metric tons CO}_2\text{e/power plant} = 30.45 \text{ more coal plants}$. $((5,100,000,000 \text{ cubic feet / day}) (96.2\%) / (0.0551 \text{ metric tons CO}_2 / 1,000 \text{ cubic feet natural gas}) (365 \text{ day / year}) (120\%)) / 3,893,003.27 \text{ metric tons of CO}_2 \text{ per year from an average coal plant} = 30.41 \text{ coal plants} + 30.45 \text{ coal plants} = 60.86 \text{ coal plants}$. These calculations use a 20-year timeframe because of the immediacy of climate change. A Cornell University study finds an average 3.8% methane emission rate at conventionally drilled wells in the U.S., while shale gas leakage rates could be as high as twice that. Robert Howarth, "Methane Emissions and Climatic Warming Risk From Hydraulic Fracturing and Shale Gas Development: Implications for Policy," *Energy and Emission Control Technologies*, Volume 2015:3, p. 45.
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